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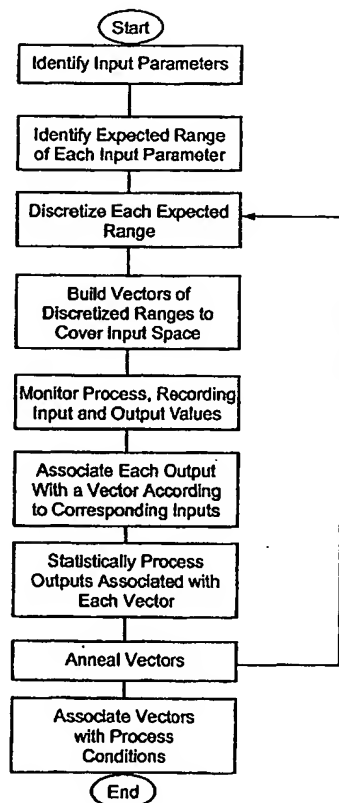
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(54) Title: SYSTEM AND METHOD FOR MONITORING PROCESS QUALITY CONTROL



(57) Abstract: A system and method for monitoring process quality control. A series of input parameters are identified as being significant in effecting the output of a process. Each input parameter has an expected range. Each expected range is discretized into a series of sub-ranges and a vector is built for each possible combination of sub-ranges. The process is then monitored to obtain a statistically significant set of samples, each sample comprising a process output and corresponding inputs (Fig. 2). A knowledge base and model are built (Fig. 5).

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*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

# INTERNATIONAL SEARCH REPORT

International application No.

PCT/IL01/00937

## A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : G06F 7/60, 17/10, 17/50; G06G 7/48

US CL : 703/2, 6, 13

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 703/2, 6, 13

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

Please See Continuation Sheet

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5,866,437 A (CHEN et al.) 02 February 1999 (02.02.1999), Abstract, Figures 2-3, Background of the Invention, Summary of the Invention, col 2, lines 64 et seq.	1-26
X	US 6,125,235 A (PADILLA et al.) 26 September 2000 (26.09.2000), Abstract, Figures 1-6, Background of the Invention, Summary of the Invention, col 5, lines 56 et seq.	1-26
X	US 5,408,405 A (MOZUMDER et al.) 18 April, 1995 (18.04.1995), Abstract, Figures 1-5, Background of the Invention, Summary of the Invention, col 3, lines 4 et seq.	1-26
X	US 5,546,312 A (MOZUMDER et al.) 13 August, 1996 (13.08.1996), Abstract, Figures 1-5, Background of the Invention, Summary of the Invention, col 4, lines 8 et seq.	1-26
X	US 5,966,527 A (KRIVOKAPIC et al.) 12 October, 1999 (12.10.1999), Abstract, Figures 1-7c, Background of the Invention, Summary of the Invention, col.5, lines 58 et seq.	1-26
X	US 5,646,870 A (KRIVOKAPIC et al.) 08 July, 1997 (08.07.1997), Abstract, Figures 1-9B, Background of the Invention, Summary of the Invention, col.7, lines 10 et seq.	1-26
X	US 5,956,251 A (ATKINSON et al.) 21 September 1999 (21.09.1999), Abstract, Figures 1-17, Background of the Invention, Summary of the Invention, col.7, lines 33 et seq.	1-26
X	US 5,781,430 A (TSAI et al.) 14 July 1998 (14.07.1998), Abstract, Figures 1-17, Background of the Invention, Summary of the Invention, col. 3, lines 45 et seq.	1-26

☐ Further documents are listed in the continuation of Box C.

☐ See patent family annex.

* Special categories of cited documents:	
"A" document defining the general state of the art which is not considered to be of particular relevance	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"E" earlier application or patent published on or after the international filing date	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family
"P" document published prior to the international filing date but later than the priority date claimed	

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PCT/IL01/00937

## Continuation of B. FIELDS SEARCHED Item 3:

EAST

search terms: model\$, statistic\$, vector, manufact\$, knowledge adj base, anneal, process, discret\$, range

## INTERNATIONAL SEARCH REPORT

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### Box III TEXT OF THE ABSTRACT (Continuation of Item 5 of the first sheet)

The technical features mentioned in the abstract do not include a reference sign between parentheses (PCT Rule 8.1(d)).

#### NEW ABSTRACT

A system and method for monitoring process quality control. A series of input parameters are identified as being significant in effecting the output of a process. Each input parameter has an expected range. Each expected range is discretized into a series of sub-ranges and a vector is built for each possible combination of sub-ranges. The process is then monitored to obtain a statistically significant set of samples, each sample comprising a process output and corresponding inputs (Fig. 2). A knowledge base and model are built (Fig. 5).